Division 45
Agriculture, Fisheries and Food

Foreign Direct Investment (FDI) in Land in Madagascar

gtz

On behalf of
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for Economic Cooperation
and Development

The opinions expressed in this report are those of the author and not necessarily those of the PGM-E/GTZ

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List of Acronyms

BEL	–	Bio Energy Limited
BIANCO	–	Bureau Independent Anti-Corruption
BMZ	–	Federal Ministry for Economic Cooperation and Development
CI	–	Conservation International
EDBM	–	Economic Development Board of Madagascar
EIA	–	Environmental Impact Assessment
FAO	–	Food and Agricultural Organisation of the United Nations
FDI	–	Foreign Direct Investment
FES	–	Friedrich-Ebert-Stiftung
FT	–	Financial Times
GDP	–	Gross Domestic Product
GEM	–	Green Energy Madagascar
GTZ	–	Deutsche Gesellschaft für Technische Zusammenarbeit
HYV	–	High Yielding Varieties
IFAD	–	International Fund for Agricultural Development
KfW	–	Kreditanstalt für Wiederaufbau
LDC	–	Least Developed Countries
MAEP	–	Ministère de l'Agriculture, d'Elevage et de la Pêche
MAP	–	Madagascar Action Plan
MCA	–	Millennium Challenge Account
MEFT	–	Ministère d'Environnement, des Forêts et du Tourisme
MFE	–	Madagascar Future Enterprise (belongs to DAEWOO Logistics)
MINENV	–	Ministère de l'Environnement, des Eaux et Forêts
NGO	–	Non Governmental Organisation
NPK	–	Fertiliser, consistent of nitrogen, phosphor and potassium
ONE	–	Office National pour l'Environnement
PGM-E	–	Programme Germano-Malgache pour l'Environnement
PNF	–	Programme National Foncier
PROJER	–	Projet des jeunes entrepreneurs
SA	–	South Africa
UN	–	United Nation
USAID	–	United States Agency for International Development
WHO	–	World Health Organisation

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1. Summary

Key facts can be summarised as:

- Madagascar is the world's fourth largest island with a surface of 587,040 km^2 and is nearly entirely located in the tropical zone. Madagascar's biodiversity with more than 16,000 plant species is unique but endangered by the traditionally practised shifting cultivation. Madagascar is classified as LDC with a GDP (at PPP) per capita of USD 1086 per year and 80% of the population have an income below USD 2 per day.
- 3.5 million ha are used for agricultural production, of which 1.1 million ha are irrigated and 2.4 million are rain fed. Dominant crop is rice, cultivated on 1.3 million ha, followed by other staple food crops such as manioc, corn and sweet potatoes. 37.3 million ha are meadows and pasture land; 12.7 million ha are still forested (with an annual loss of forest land of 0.5%).
- According to FAO estimations, further land resources of 15 to 20 million ha are potentially arable. Presumably these areas are in the less densely populated southwestern, western and northwestern regions of Madagascar where large areas of degraded grasslands exist, which are extensively used for grazing zebu. Because of low agricultural productivity, sufficient resources for an extension of agricultural area exist.
- The primary sector counts for 30% of the GDP, but employs approximately 80% of the population. Most of them live from subsistence farming.
- With 19.6 million inhabitants, population density is low (33 inhabitants/km^2), but differs widely, from less than 10 in the western regions to more than 80 in the high plateau. Even though Madagascar possesses - theoretically - sufficient arable land, it is not self sufficient in food production and has been importing about 200,000 tons of rice per year in the last several years. Another remarkable fact is that the cultivated area per family is 0.86 ha on average and thus very low in spite of the fact of existing land resources.
- Climate differs widely according to altitude and north-south extension ranging from tropical to temperate zones and allowing nearly all kinds of agricultural production. Also water is sufficiently available in most areas (except in the south which is characterised by an arid to semi-arid climate). In general, soil quality in most areas is poor. An exception is the alluvial area along the rivers. Erosion in valley areas and irrigation schemes pose a major problem due to ongoing deforestation in recent decades.
- Madagascar is characterised by large savannahs that are partially used for grazing zebu cattle. The traditional land use rights are generally not at all or poorly documented. Only 176,000 ha of cultivated land is presently titled and land conflicts occur often. The process of issuing land certificates (by implementation of "guichet foncier") has recently started and the first steps have been achieved towards a more secure land market.
- Malagasy society is very traditional, still believing in their customs and conventions and is attached to the concept of tanindrazana, meaning the land still belongs to the ancestors and cannot be sold, especially not to foreigners.
- During the last years FDI grew in importance resulting in a demand of more than 3 million ha (incl. the cancelled projects of DAEWOO and VARUN). FDI are viewed rather sceptically by the Malagasy, as seen in the example of the South Korean company DAEWOO, which wanted to lease 1.3 million ha. This demand became a high-priority political issue and can be identified as one of the underlying reasons for the former head of state Marc Ravalomanana resigning (March 2009).
- Even without considering DAEWOO's cancelled FDI project the demand for land by foreign investors still adds up to 1,660,000 ha. This demand is or would be used for the production of agro-fuels (1,231,000 ha), food production

(386,500 ha) and others (42,100 ha). Most of the projects, especially the agro-fuel projects, are aiming to use un- or underutilised grasslands. But there are exceptions such as VARUN who wants to invest in fertile land currently used for rice production.

- For the realised or planned FDI in food production, only one project aims to produce for export markets (cattle production on 200,000 ha). The other projects targeting mainly the national market could increase self-sufficiency in national food consumption.
- Most agro-fuel projects are Jatropha projects, but also projects for sugar cane and palm oil production are envisaged. Whereas Jatropha production often is located on marginal land with poor soil and/or climatic conditions, sugar cane and palm oil production is competing directly with food production for land. The latter may also harm the environment and degrade soil and water resources by intensive production methods.
- In Madagascar, it has not yet been shown that Jatropha can be grown sustainably and be economically viable on a large-scale approach. This year some investors have already abandoned their Jatropha plantations. In the future the risk of failure has to thoroughly be analysed before assigning huge areas of land for Jatropha production, as this type of FDI presents a high risk for investors, farmers and for the state.
- The process of establishing land lease contracts is not open and transparent. The lack of transparency in combination with the lack of documented land rights results in an inappropriate recognition and consideration of farmers' interests. Only if a win-win-situation on all levels is achieved, will the population accept the FDI contract. Otherwise, a high risk of sabotage arises.
- Knowledge about the availability and quality of natural resources (land, soil and soil fertility, water etc.) is limited and so far no land use planning instruments have been implemented. On the other hand there is no planning regarding the increasing demand for food and firewood due to a fast growing population. The development of food production will also be influenced by erosion and climate change. The change in domestic consumption has to be considered when assigning large areas of land to foreign investors.

2. Introduction

As the NGO GRAIN stated, "The food and financial crises have, in tandem triggered a new global land grab. Food-Insecure governments that rely on imports to feed their people are snatching up vast areas of farmland abroad for their own offshore food production". In Madagascar the case of the South-Korean company Daewoo Logistics which negotiated a contract to lease 1.3 million ha of land led to an intensive debate at national level. It might be one of the reasons for replacing the government responsible. One of the major concerns of the population was whether this deal would be compatible with the traditional concept of landownership. Other aspects dealt with whether it would help the farmers in their daily struggle to make a living or worsen their situation. The case can serve as an appropriate example of the political dimension of FDI in land projects.

3. Country Profile

Madagascar is the fourth largest island in the world and with its 587,040 km^2 slightly bigger than France. With more than 12,000 species of flowering plants, most of them endemic, the island is one of the world's biodiversity hotspots. New species are discovered nearly every day, but at the same time they are already endangered mainly due to a loss of natural habitats. Pressure on natural forest is high, slash and burn is still practiced. Firewood remains the most used source of household energy for the poorer and rural population, as in most African Sub-Saharan countries. A demographic growth rate of nearly 3% makes Madagascar one of the most rapidly growing countries in Africa. Since colonial authorities undertook the first systematic census at the turn of the twentieth century, the population has grown from 2.2 million in 1900 to an estimated 20 million in 2008. This results in a growing pressure on natural resources, but still on a low level.

Ranging from 12 to 26 degree latitude south, the climate is dominated by southeastern trade winds. Madagascar's climate is characterised by two seasons: a hot, rainy season from November to April; and a cooler, dry season from May to October. Since high mountains cover Madagascar from north to south, the climate conditions vary enormously within the country. The east and west coasts have a tropical climate, with the eastern region showing an extensive rainfall, ranging from 1,500 mm in the south to more than 3,000 mm in the northeast. Because rain clouds discharge much of their moisture east of the mountains, the central highlands are appreciably drier (1,000 to 1,500 mm annually), but also much cooler (temperate zone). The west coast is even dryer than the central highlands because the trade winds lose their humidity by the time they reach this region. The southwest and the extreme south are arid zones with sometimes no more than 300 mm of annual rainfall.

Soil fertility is often poor with Ferralsols as the dominant soil covering about 65% of the highlands. These soils are very deep and may reach a thickness of up to 30 m where not eroded. They have a very low water absorption capability and are strongly leached. Content of organic material and minerals such as N, P and K are poor. Other soils are Lithosols, Cambisols and the sols hydromorphes (Gleysols). Although the Gleysols cover only a small percentage of the highlands (1.6 %), they are very important for and intensively used by farmers for lowland rice production. Gleysols, also characterised *as bas-fonds*, are formed from unconsolidated, alluvial deposits and show hydromorphic characteristics. As rivers mostly follow fissures and faults, there is a mixture of parent materials in deep alluvia, giving soils different properties over short distances.

Land pressure varies from region to region. The average population density (40 people per km^2) is comparable with many other Sub-Saharan countries like Mozambique (24 per km^2), Cameroon (36 per km^2), Tanzania (39 per km^2) or Kenya (67 per km^2). But in Sub-Sahara there are also countries found with a much higher land pressure for instance Uganda (113 per km^2), Burundi (280 per km^2) and Ruanda with 301 people per km^2.

Due to its favourable climate conditions and economic activities around the capital, the high plateau shows the densest population ratio of more than 80 people per km^2. The east coast is highly populated with a density of about 20 to 40 people per km^2. In this tropical zone the remains of rainforests can be found, but are endangered by growing land pressure. The annual deforestation rate is estimated to be about 0.53%, mainly due to slash and burn practices called *tavy*. The arid south and the northern region show a medium population density with 10 to 20 inhabitants per km^2. Characterised by large savannahs used for

grazing cattle (zebu), the western and northwestern regions are characterised by a very low population density with less than 10 people per km^2.

Although the agricultural sector contributes only 30% to the GDP, nearly 80% of the population makes a living with agricultural products. The Ministry of Agriculture undertook the last agricultural census in 2004/2005 showing that the agricultural population is estimated to be about 13.3 million people living in approximately 2.4 million households. Nearly half of them can be found in the provinces of Antananarivo and Fianarantsoa, both located on the high plateau.

Table 1: Land use in total, 2007

Type of land	in million ha
Country area	58.70
Land area	58.15
Forest area	12.76
Total Agricultural area	40.84
Permanent meadows and pastures	37.29
Cultivated agricultural land	3.55
Of which irrigated	1.09
Other land	4.55

Source: FAO Statistics 2007 and FAO

The FAO survey shows that in 2007 about 3.55 million ha were cultivated and 37.29 million ha were permanent meadows and pasture land. This data differs widely from data procured by the Ministry of Agriculture (Ministère de l'Agriculture, d'Elevage et de la Pêche, MAEP), which was collected in the last census of 2004/2005. According to this survey, the cultivated area includes annual and permanent crops in total amounts of 2,083,590 ha. The whole area of (potentially) arable land is estimated by FAO to be about 15 to 20 million ha, which represents a huge potential of land that could be cultivated. Unfortunately, there is no data available on the quality and location of these areas. Most probably it addresses the western, northwestern and southwestern regions of Madagascar (Atsimo Andrefana, Menabe, Melaky, Boeny, Sofia, Diana, Betsiboka and Bongolava). In these regions large areas of non- or underutilised savannahs are found, presenting enormous potential for extension and intensification of agricultural production.

The major crop in Madagascar is rice, cultivated on 1.14 million ha, most of it on irrigated land (978,000 ha). Besides rice other staple foods like manioc, corn and sweet potatoes dominate the agricultural land use pattern. Corn is mainly grown in the south but also in the region of Vakinankaratra, where it is used mainly as fodder for milk cows on dairy farms. The permanent crops like vanilla, cloves and pepper are all tropical crops which are grown on the hot and humid east coast whereas coffee plantations are mostly situated in the highlands of Fianarantsoa. Cocoa is found in the region of Diana in the north of the country.

Most Malagasy farmers practice subsistence agriculture. With an average size of 1.2 ha per household, farmers produce barely enough to feed their families. Until the mid 1970s, Madagascar belonged to the group of rice exporting countries. But in 1972 when the socialist government came into power and implemented agrarian reforms regulating the market (taxes on export crops, artificially low domestic food prices) food production decreased and Madagascar became dependent on rice imports. During the last years, annual rice production increased, but Madagascar is still not self-sufficient in food production. In 2008/09 (April to March) Madagascar imported 312 thousand tons of cereals, including 61 thousand tons of food aid (Source: FAO).

Agricultural productivity is low in comparison to other countries with similar climate and soil conditions. In 2007, Malagasy farmers harvested on average 2.7 tons paddy per ha whereas the average yield in Indonesia is estimated at 4.7 tons/ha. Even the average rice yield of all Asian countries is estimated to be 4.3 tons per ha (FAO Statistics).

An important source of income is livestock. In total, 70% of the livestock is raised in the northwest, west and southern regions of Madagascar.

Traditionally, Zebu cattle play a major role in the culture of various tribes in Madagascar. In the census of 2004/05 nearly 10 million heads of cattle were counted, with an average of 8.1 head per farm. Most of the Zebu cattle are found in the northwest and western regions of Madagascar where savannahs, serving as pasture land, dominate the landscape. In the south, due to unfavourable climate conditions, little ruminants like sheep and goats dominate. Nevertheless, Zebu cattle are also often found in these regions.

Cocoa Harvest

Jatropha Nursery of Eco Flower Investor

Rice Harvest

4. Land Tenure System, Land policy and Legal framework for investments in land

4.1 Land Policy

4.1.1 Land Tenure System

The land tenure system in Madagascar is quite diverse and complex and actually in a period of transition. Before colonisation no land titles were known; land was used in and by the greater family. The family owned the land by heritage and traditional local authorities were approached in case of land conflicts. The French introduced a system of private landownership with proper land titles. The introduction of a cadastral system had started when Madagascar became independent. Unfortunately, this work has not continued and documentation of landownership has not been updated anymore. Today, ownership can be proven for only 172,000 ha of cultivated land by a land title dating from colonial times. This results in a situation where land conflicts occur quite often. Most cases of land conflicts occur when land is sold and the buyer does not know or ignores the borders of the purchased plot. This is especially the case when sold to members of other ethnicities.

Because of the increase in land conflicts and to make it easier to valorise non-occupied land, President Marc Ravalomanana's government started a land reform in 2005, and introduced new land legislation. Whereas in the past, the non-titled land was presumed to belong to the state, this changed and the so-called "territoire domanial" was divided into two parts: one part still belongs to the state for specific purposes, but the biggest part is transferred to communities and individuals who are valorising the land. When they can prove that they valorise the land, they can apply for a land certificate. This certification is given by the "guichet foncier", which are newly introduced service organisations. These service providers will be introduced in any community to clarify landownership and to document it with a certificate. By the end of 2008, 273 guichet foncier were installed and the target is having 1020 in 2012.

In general, all kinds of leasing arrangements are known in Madagascar, such as loan, usufruct, sharecropping and tenancy.

4.1.2 Securing land rights (modern and traditional rights)

Traditionally, the land was owned by the family and received by inheritance. Since the land pressure was low before colonisation, land conflicts occurred rarely and were solved by the traditional authorities (raimand'reny).

The fact that everybody who is valorising the land or who has cleared it once or is using it for grazing cattle can claim the land and has to be compensated, makes the process of land acquisition difficult, especially if applied for large areas.

Beside this legal aspect of clearing land rights, there is a big problem of security, because of outlaws, especially in all the less densely populated areas in the western regions (northwest, west and southwest). Traditionally, they concentrated on rustling cattle, which is a big problem in these regions. Today, they are looking for all kinds of additional sources of income.

Field work with ox plough

4.1.3 Land and land Lease market

There is no transparency in the land market and the costs of buying or leasing land are not published. There are some rumours saying that investors are paying between EUR 0 and 6 per ha for long leasing contracts. The price is comparatively low - the state-owned railway company FCE is charging 180,000 MGA/ha (ca. 72 EUR/ha) for leasing their land to farmers - because the investor also has to invest in infrastructure etc.

Regarding leasing deals within the family or the neighbourhood, the survey of the MAEP in 2004 shows that of the 284,000 ha not exploited by the owner himself, more than half of the area is given to the farmer for free of rent.

4.2 Legal framework for investments in land

In 2008, a new law (Loi No 2007-036 of January 14, 2008 about investments in Madagascar) was established to simplify access to land for foreign investors. The Economic Development Board Madagascar (EDBM) was established to facilitate and support foreign investors throughout the administrative processes and new legislation was introduced to make the process of investment in Madagascar easier. All measures were taken to attract FDI.

With the new law, foreign investors are forced to create a company in Madagascar according to the Malagasy law. It is interesting that these Malagasy companies, although regularly dominated by foreigners, have the right to lease and to buy land. Whereas the constitution clearly states that it is forbidden for foreigners to buy land.

For foreigners leasing or buying land is not an easy process and a lot of steps have to be taken. The most important steps are:

- Identification of the land
- Transmitting a request (with making a down payment of 40 Ar/ha (2 US-Cent))
- Marking by the topographical service
- Public acknowledgment
- View of “Chef de District” and technical services involved in the request
- Decision by the upper authority
- Second marking and determination of the surface
- Establishing the contract
- Approbation of act
- Preparation of the dossier
- Transmission of the dossier to the competent authority (“chef de region”, minister, council of ministers, council of government) depending on the surface area (< 50 ha: “chef de region”; between 50 and 500 ha: minister; > 500 ha: council of ministers)
- Registration with the fiscal authority
- Reproduction of land maps
- Notification to the actors
- Formal acts after notification
- If the land is not yet registered: inscription in the name of the Malagasy state, then inscription of the land rights of the requester.

Investors are not obliged to use the services of EDBM, but all processes go much faster with its support.

Furthermore, an environmental impact assessment is compulsory for agricultural projects bigger than 1,000 hectares. The investor is responsible for ensuring the assessment is carried out according to the respective environmental law (Decret MECIE). Informing and inquiring the concerned population is part of this assessment. In the case of expropriation, the compensation is defined in a negotiating process with the affected population including local authorities.

5. Description and analysis of FDI in land (recent development and trends)

5.1 Overview of FDI in land

The following table summarises the demand for FDI in land in Madagascar from 2005 until March 2009.

Table 2: Overview of FDI in land, demanded areas, 2009

	Area, in ha
FDI in land (in total)	3,020,300
FDI in land for food production	1,446,500
FDI in land for agro-fuel production	1,531,700
FDI in land for cash crop production	9,100
FDI for other purposes	33,000
Others	530

Source: Own research

All major FDI in land-projects are included (with more than 1,000 ha requested by foreign and/or national investors). In nearly every single case the land will be used for crop cultivation with the exception of Madabeef who wants to invest in livestock production on 200,000 ha grasslands. Most of the demands are still in the planning phase and land contracting has not been finalised yet. This overview still includes the Daewoo case (1 million ha for food production and 0.3 million ha for agro-fuel production), although the new leader of the transition government in Madagascar has recently cancelled this project.

In general, investors from European and American countries are interested in the production of agro-fuels whereas Asian countries are mainly looking for FDI in food production. The table on the following pages provides some more details about the potential investments. The list contains only investments greater than 1,000 ha and many of the investments are still in the project phase where a contract regarding the land has not yet been signed.

The total demanded land adds up to more than three million ha, representing nearly the surface cultivated today. Roughly one half is designated to agro-fuel production and the other half to food production. Two of these projects have been cancelled after the change of executive power in Madagascar: DAEWOO and VARUN (Note: The VARUN project consisted of two parts. The smaller one referred to the lease of state owned land – and this part has been cancelled. The greater part of the deal refers to leasing privately owned land, which has been signed by farmers' representatives. If the cancelled projects are deducted, figures and the relation of food to agro-fuel production change heavily: 1,231,700 ha for agro-fuel production versus 386,500 ha for food production. Food production is dominated by two investments: 200,000 ha for export-oriented beef production and 170,000 ha for rice and maize production (VARUN). The beef production project is the only one for food production conducted by a European investor. In general, food production is dominated by Asian countries including the neighbouring countries across the Indian Ocean. Except for beef production, food production is designated mainly for the national market, and therefore makes it possible to reduce food imports so that Madagascar is independent from food imports.

Table 3: FDI in land, March 2009

Purpose for demanded land	Total land (in ha)	Investors and capital allocated	Nature of the land use and kind of land acquired	
1. Food production				
Maize	1,000,000	DAEWOO Logistics (South Korea) / Madagascar Future Enterprise (MFE) Total investment: USD 6 bn (incl. investment in palm oil, which you will find in the chapter agro-fuel production)	Underutilised grasslands / savannahs (used as pasture for zebu) in the western regions of Melaky and Menabe	
Livestock	200,000	Madabeef Malagasy company, financed and owned by foreign investors (United Kingdom); Investment of USD 480 million.	Underutilised grasslands / savannahs (used as pasture for zebu) in the west and southwest, regions of Menabe and Atsimo Andrefana.	
Rice and maize and lentils	170,000	VARUN (India) total investment of USD 1.2 billion	Land (paddy fields) is owned by farmers and used for irrigated rice production; in the region of Sofia.	
Maize and lentils	60,000	VARUN, see above	Besides the leasing of land from farmers for rice production, VARUN wants to lease state-owned land for the production of maize and lentils, in the same region (Sofia); the land use of this part could not be clarified	
Sugar	10,000	SUCOCOMA (China)	Irrigated land, used before by the former state-owned sugar company for sugar cane production (the former company failed) in the regions of Diana and Menabe.	
Oil plants, Cereals and Vegetables	4,500	SoaBe (France)	Industrial plantations in the region Atsimo Andrefana; no information about land use today	
Vegetables and Aquaculture	1,000	Domaine du Lemurien (Mauritius)	Land is located in the southern region of Anosy, utilisation today is not known.	
Potatoes and Potato seeds	1,000	Monteverde (Mauritius)	Cultivated land in the high plateau, region Analamanga.	
2. Agro-fuel production				
Jatropha	452,500	GEM Biofuels (United Kingdom)	Region Atsima Andrefana, Jatropha cultivation, mainly on grasslands but also on former cultivated land (cotton, manioc etc.)	
Palm oil	300,000	DAEWOO Logistics (South Korea) / MFE See details above	Establishing palm oil plantations in the regions of SAVA and Atsinanana; land use today could not exactly be clarified, it seems that forested areas are excluded; but probably today, the land is used and cultivated by Malagasy farmers (high risk of expropriation)	
Sunflower	150,000	Unitech and United Technologies Group (USA)	Sunflower plantations in Diana, Sofia, Boeny and Melaky, For oil production no further information available	
Jatropha	120,000	Bio Energy Limited (Malagasy company with Australian investors)	Underutilised grasslands / savannahs (used as pasture for zebu) in the region of Sofia; shall be cultivated with Jatropha.	

Source: Own compilation based on own interviews, Grain, 2008; v. Braun and Meinzen-Dick (IFPRI), 2009; Cotula et al. (IIED, FAO, IFAD), 2009.

	Description / comment on integration of small farmers in the deal and the production process	Reference
	Contract has not been signed; it was foreseen for the production of maize: • To use high input (seeds from USA, fertiliser and pesticides) • To mechanise (with imported tractors) • To import trained labour from SA • to create 70,000 jobs for Malagasy people (total – incl. the jobs for the palm oil plantations)	DAEWOO 2008
	Cattle beef production, mainly for export, by introduction of ranching (incl. traceability)	EDBM Madabeef
	VARUN has signed a contract with 13 associations representing nearly 250,000 farmers to lease these farmers' paddy fields of. With high input VARUN wants to triple the rice production. 30% of the production shall be used as compensation for farmers and 20% of total production for export.	SODHAI 2009
	The contract for the state owned land is not yet signed. It was envisaged: • To export 50% of the production of maize • To use high input (high yield varieties, fertiliser and pesticides) • To mechanise (with imported tractors) • But also to create jobs for Malagasy people	Le Monde 20.03.2009 SODHAI 2009
	Cultivation of sugar cane for sugar production. Farmers are needed for cultivation and harvesting the sugar cane	SUCOCOMA
	No further information available	EDBM
	No further information available	EDBM
	Production of potatoes and potato seeds; processing; no information about integration of farmers available	EDBM
	Started already in 2006 with Jatropha cultivation by a low cost approach (direct seeding without any mechanical preparation): during the planting campaign 3 to 4,000 local farmers are employed. No EIA has been carried out.	Uellenberg 2008; www.gembiofuels.com ONE
	See above; • seeds should be imported from Indonesia	**DAEWOO 2008;** **MAEP** **CI**
	No further information available	EDBM
	• Local farmers are needed for preparation, cultivation and harvesting of Jatropha • Intercropping is foreseen • contract is not yet signed	**EDBM** **Bio Energy Limited**

Table 3: FDI in land, March 2009

Purpose for demanded land	Total land (in ha)	Investors and capital allocated	Nature of the land use and kind of land acquired	
2. Agro-fuel production				
Jatropha	100,000	Global Agro-fuel (Lebanon)	Region Boeny and Sofia; land use today could not be clarified	
Sugar Cane	100,000	OSHO Group (South Africa)	Sugar cane production for ethanol in the region Menabe	
Jatropha	100,000	Tozzi Renewable Energy (Italy) Investment of USD 300 million	Jatropha production in Atsimo Andrefana, no further information about land use available	
Jatropha	80,000	ER Company (country?)	Region Atsimo Andrefana; land use today could not be clarified	
Oil Palm	60,000	Sithe Global (USA)	Palm oil production for biodiesel in the region Atsinanana	
Jatropha	50,000	Delta Petroli (Italy); investment of nearly EUR 50 million	Underutilised grasslands / savannahs (used as pasture for zebu) in the region of Sofia.	
Jatropha	35,000	New Ecology Oils (NEO) (France) investment of EUR 8.4 million in the first two years	atropha production for export in the region of Bongolava. Underutilised grasslands / savannahs (used as pasture for zebu)	
Jatropha	30,000	JSL Biofuels (Germany)	Underutilised grasslands / savannahs (used as pasture for zebu) in the region of Boeny	
Eucalyptus and Acacia	30,000	Oji Paper (Japan)	Wood production and processing (chip production) for fuel in the region of Atsinanana	
Jatropha	15,000	NOTS Renewable Energy (The Netherlands)	Jatropha production in the region of Betsiboka. Underutilised grasslands / savannahs (used as pasture for zebu)	
Sugar cane production for ethanol	15,000	SOPREMAD (France)	Sugar cane production in the region of Boeny; underutilised grasslands/savannahs, extensively used as pasture for zebu	
Jatropha	10,000	Avana Group (United Kingdom)	Underutilised grasslands / savannahs (used as pasture for zebu) in the region of Bongolava shall be cultivated with Jatropha.	
Jatropha	10,000	J-Oils (France)	Underutilised grasslands / savannahs (used as pasture for zebu) in the region of Diana	
Jatropha	3,000	JatroSolutions (Germany) created a Joint Venture with the NGO Green Island Madagascar, called JatroGreen	Underutilised grasslands / savannahs (used as pasture for zebu) in the region of Haute Matsiatra	
Jatropha	1,200	Magnard (France)	Region of Atsimo Andrefana; land use today could not be clarified	
3. Cash crop				
Oil Palm	9,100	Les Cultures du Cap Est; Malagasy company, financed by an Indian Group	Palm oil plantations in the region of SAVA and transformation for industrial purposes; extension of an existing palm oil plantation (1,000 ha); 90% of the demanded land is non-utilised land, 10% is cultivated land (rice etc.)	
4. Others				
Agroforestry (pine)	33,000	DEKO SA (South Africa); in Madagascar represented by DEKOMAD	Investment in agroforestry in cooperation with the company Fanalamanga, cultivating pine in the region of Alaotra Mangoro; land use today could not be clarified	

Source: Own compilation based on own interviews, GRAIN, 2008; v. BRAUN AND MEINZEN-DICK (IFPRI), 2009; COTULA ET AL. (IIED, FAO, IFAD), 2009.

	Description / comment on integration of small farmers in the deal and the production process	Reference
	Jatropha production, no more information available	EDBM
	further information available	EDBM
	No further information available	Midi, 18.11.2008
	Jatropha production and oil extraction no more information available	EDBM
	No further information available	EDBM
	• PPP with the catholic church (capuchin order) • Project has started in 2008 • 1200 local farmers shall be employed	EDBM Uellenberg 2008
	• 5 farms shall be established; • Since the area is much less densely populated, new villages will be established to get local labour force. • 5,000 local farmers will be employed • Contract for the land is not yet signed	Uellenberg 2008 Neo Ecology Oil (NEO)
	Integration of local farmers for preparation and cultivation.	Uellenberg 2008
	Carbon Credits shall be demanded No further information available	EDBM
	Local farmers will be employed and integrated in the project. Production shall be used for local consumption (rural electrification). The company is linked to NOTS Foundation, which is supporting social projects in developing countries.	**NOTS Renewable Energy**
	Integration of local farmers is foreseen, a part of the production is for local consumption.	EDBM, Uellenberg/Andrianaivo 2008
	In cooperation with a project of young entrepreneurs (PROJER), Avana Group wants to plant 10,000 ha of Jatropha, contract is not yet signed	**AVANA Group;** **PROJER 2009**
	Integration of local farmers is foreseen for preparation, cultivation and harvesting; Contract is not yet signed	EDBM J-Oils
	Jatropha cultivation with high input, including irrigation system. Beside commercial activities a lot of research is done.	Uellenberg 2008
	Jatropha production, transformation and commercialisation for the local market	EDBM
	The Indian company has the technical skills and is dealing with the technical aspects. Local farmers will be employed on the plantations.	EDBM Les Cultures du Cap Est
	No further information available	EDBM

5.2 Case Studies on FDI in land

Three cases might serve as examples and shall be analysed more in detail. Three cases are chosen, each case being unique and totally different from the others. First case shall be DAEWOO Logistics, which represents the biggest and most known case of land leasing in Madagascar. A second case represents investments in Jatropha as this kind of investment has attracted a lot of international money. Thirdly, VARUN has been chosen since this case heavily affects smallholder farmers.

5.2.1 Daewoo Logistics

On July 17, 2008, the first indication of a possible interest by the South Korean company Daewoo Logistics in investing in agro-business in Madagascar was published in an article in the Madagascan newspaper L'Express. The article mentioned that Daewoo Logistics had undertaken research in four regions with the objective to identify land for palm oil and corn production. The palm oil production was designated for the local market, whereas the corn production was to be exported. In total 100,000 ha were to be cultivated by improved production methods using high yielding varieties (HYV) corn seeds imported from the United States and HYV palm oil seeds from Costa Rica and Indonesia. With an investment of 250 million USD about 6,500 jobs could be created, resulting in an average area of 15 ha per person.

This project had been developed in close collaboration with the Ministry of Land Reform and the Economic Development Board of Madagascar (EDBM). On July 14, 2008, both parties signed a letter of intent. Later that year, the project increased tremendously in volume. On November 18, 2008, the Financial Times (FT) reported that Daewoo Logistics had signed a contract with the Malagasy Government to lease 1.3 million ha land for 99 years to produce 4 million tons of maize (on 1 million ha) and 500,000 tons of palm oil on the remaining 0.3 million ha. The total production would be exported to South Korea.

After further prospecting, the company decided to lease 1 million ha in the western regions (Menabe and Melaky) for corn production and 0.3 million ha in the east (Atsinanana and SAVA) to establish palm oil tree plantations. The total amount of investment increased to 6 billion USD. Local people were supposed to be the possible labour force and be supervised by South African farmers. For operative reasons a local company was established according to the Malagasy law named Madagascar Future Enterprise (MFE).

According to the Financial Times from November 19, 2008, Daewoo had an agreement with Madagascar's government that it could cultivate 1.3 million ha of farmland at no charge when it signed a memorandum of understanding in May. November 26, 2008, this has been categorically denied by the government of Madagascar, starting an intensive debate about the upcoming project. The government clarified that a contract had not yet been signed and that only a memorandum of understanding exists, allowing Daewoo to prospect the land.

During prospecting, MFE signed different documents with local authorities:

- October 6, 2008: The "chef de region" of Atsinanana and the "chef de district" of Brickaville and Toamasina II admitted the delimitation of 128,000 ha.
- November 7, 2008: The Service for Land Rights Maintirano recognised land use for 336,000 ha in a very isolated area of the region Melaky (between the district of Besalampy and Antsalova)

According to a Daewoo report the company did a "mission of reconnaissance" between September 11 and October 12, 2008. The aim was to identify suitable terrain, to verify the availability and to evaluate the pertinence of the land and was carried out in the regions of Menabe, Melaky, Atsinanana and SAVA. During this mission local authorities were met and soil samples taken. Due to the results of the mission, the surface had been reduced because new national parks were being created, some parts of terrain foreseen for the corn plantation were not suitable (too rocky and eroded) and large areas of the terrain foreseen for palm tree plantations were also not suitable (too sandy and steep).

New locations were identified. After exclusion of non-appropriate areas like villages the following areas remained:

Melaky	503,974 ha
Atsinanana:	91,744 ha
SAVA	239,705 ha
Menabe	339,390 ha

The results of soil analysis differed widely:

Melaky: The soil in general is very poor in potassium (K20), very poor in phosphor (P2O5) and has a bad decomposition of organic materials.

Atsinanana: There are hydromorphic soils in the lowlands, permanently saturated by water (called *Horaka*), but also alluvial soils with river inputs richer in clay or sandy alluvium (called *Baiboho*), but also poor in K_2O and P_2O_5.

SAVA: In SAVA different types of soil are found: from alluvial soils more or less hydromorphic at the coast to ferralitic and ferruginous soils by Vohemar to an alluvial quaternary area and dunes at the massif of Tsaratanana.

There was no information about the current land use available, but a rough estimation showed that Daewoo seemed to avoid investing in forested areas. Furthermore, it is likely that most of the areas in the regions of Menabe and Melaky are non- or underutilised land, degraded by bush fires, but at least partly used for grazing zebu. In the regions of Antsinanana and SAVA the situation seems to be different. Population density is generally higher and most of the arable land is already cultivated. The former president of the natives of SAVA, Bezandry Flavien, stated that the demanded land in the commune of Antalaha is cultivated with palm oil, vanilla, clove, rice etc. If this is the case, expropriation would likely happen.

High input production methods were supposed to be chosen to reach the expected yields of more than 5 tons of corn per ha characterised by a fertiliser use of 200 kg NPK + 100kg of urea/ha. The use of herbicides and insecticides (especially against heteronychus) was foreseen. Especially in Menabe the cornfields would be irrigated, but also the palm tree plantations in the east.

On September 5, 2008 the Office National pour l'Environnement (ONE) demanded MFE to execute the required environmental impact assessment (EIA). Yet the EIA had not even started when in March 2009 the transition government cancelled the project.

Eucalyptus Plantation

Rice harvest


Pineapple cultivation


Baobab


Jatropha plantation


Rice Fields


Intercropping

5.2.2 GEM Biofuels

The British company GEM Biofuels (*www.gembiofuels.com*) is one of the first companies who started to establish large-scale Jatropha plantations in Madagascar. Since 2007 the company is listed on the London Stock Exchange. The objective of the company is to produce biodiesel for the world market.

In 2005/06, GEM started their activities in growing Jatropha in Madagascar. The first year trials were made in the southeast (region Anosy). After these trials failed, GEM moved to the region Atsimo Andrefana. In this region another species of the genus Jatropha is endemic: Jatropha Mahafalensis, a rather unknown plant but with similar properties as Jatropha Curcas. The grains also contain 30 to 40% of oil, strongly resembling the properties of Jatropha Curcas oil. GEM has decided to cultivate both Jatropha Mahafalensis and Jatropha Curcas.

In 2006/07, Jatropha plantations were often established on land close to the National Road 7 (Route National 7 or RN7), previously used for cotton, corn and millet. During the 2007/08 campaign, GEM moved more northeast along the RN7 (district of Sakaraha) and planted Jatropha mainly on grasslands, in total about 30,000 ha. During the last campaign, GEM established plantations along the RN9 north of Toliara (district of Toliara II), roughly 15,000 ha.

GEM follows a low cost approach to setting up plantations. Direct seeding on non prepared land. Local people do the entire work manually. Roughly 4,000 workers have been employed during the last campaigns, lasting from December to end of January.

On their website GEM Biofuels has announced that approximately 13,300 ha are planted with Jatropha. That means GEM Biofuels has heavily reduced the area planted, probably because of difficulties in establishing Jatropha plantations properly (no soil preparation, wrong cultivation techniques etc.) and of unfavourable circumstances like bush fires, droughts etc.

Furthermore, the website states that "GEM Biofuels has entered into 18 agreements with communes in relation to 452,500 ha of land suitable for the establishment of plantations in Madagascar, which provide it with the exclusive right to establish Jatropha plantations on the land." **452,500 ha is a huge amount of land, and this was negotiated with the communes only, which does not conform to legal requirements**. The law clearly demands the consent of the council of ministers for areas larger than 500 ha.

Beside these facts, there is a high risk that yields will hardly be sufficient to make this business economically viable as the whole area is known for its arid climate. Also, the existing plantations are in a bad shape due to bad plantation management.

5.2.3 VARUN Agriculture

The Indian company VARUN Agriculture is investing in large-scale food production, making it an interesting case. The first to bring up the issue of this large investment in land was "Le Monde". In March 2009, Le Monde published an article that the Indian company VARUN International wanted to lease nearly 500,000 ha. This affected the regions Sofia (170,000 ha), Menabe (165,000 ha) and Atsinanana (100,000 ha) where VARUN wanted to grow rice (80%), corn and lentils. Unlike DAEWOO, VARUN did not look only for uncultivated land, but made contracts with farmers to cultivate their land. An investment of 1.5 billion EUR was planned for the next 10 years. Later it turned out that the deal consisted of two contracts: one contract to be signed with the Malagasy Government for about 60,996 ha of state owned land and another contract to be signed with 13 farmers' associations for about 170,914 ha owned by 250,000 farmers.


Jatropha


Tabacco cultivation

Le Monde, citing an anonymous informant closely involved in the deal, wrote that VARUN had to hand out gifts to former President of State, Marc Ravalomanana, respective to TIKO, for instance 15,000 household articles made of stainless steel and seeds of Indian rice.

The idea of the deal in terms of the individual farmers is to modernise agricultural production via mechanisation and high inputs (HYV, fertiliser, pesticides etc.) in order to increase the production. The farmers should give the land to VARUN (for 50 years) receiving a rent of 30% of the harvest. With an estimated increase in production from currently 3 tons to 10 to 12 tons/ha the farmers would not have less than today without working on their fields. The long lasting contract alienated some farmers, who preferred contracts of 15 or 20 years only. The director of regional development in Sofia noticed some lack of transparency. Although the contract should be treated confidentially, some Malagasy newspapers reported on the development of the negotiation process. On April 15, 2009, the Malagasy journal "La Gazette" reported some details of the contract between the association of farmers and VARUN International, signed January 26, 2009. According to that article, a consequence of signing the contract was, that all property rights of the affected area of 170,914 ha were given to VARUN. According to the census (MAEP 2008), in 2004, the cultivated surface in the region of Sofia in total is 149,482 ha. That means, really every single ha of cultivated land in this region is going to be cultivated by VARUN. On April 25, 2009, La Gazette published that the contract was supposed to be signed on January 26, 2009 (which was not carried out eventually) and that VARUN demanded all concerned parties to treat the details of the contract confidentially.

Despite the requirement for confidential treatment, on April 28, 2009, the association "Les Zanak'i Sofia" published a "communiqué" that the initiative was taken by the association itself. It was the association who was looking for foreign investors supporting projects dating from 1999. According to the association, it was then the company VARUN who responded in a favourable manner to that offer.

VARUN appointed a Malagasy technical consultant (SODHAI) to negotiate with the Malagasy authorities and with the farmers to receive the leasing contract with the government and to get the approval of the farmers concerning their own land. SODHAI operated as an intermediary between the company VARUN International and the farmers' associations. The following information is taken from a report provided by SODHAI:

In September 2008, VARUN International signed two letters of intent (protocol d'accord) with the Malagasy government to contribute to the objective of the government to double the agricultural production by 2012. On October 25, VARUN International signed a third letter of intent with the authorities of the Region of Sofia to make the requested terrain available and cultivable in order to realise the fixed objectives. VARUN had to procure the material, the technology and the financing of the project.

The overall objective of the project is hydro-agricultural development of 13 great irrigated zones with a surface of 231,911 ha in total, construction of basic socio-cultural infrastructure such as CSB, school and training centre, administration office, road infrastructure, drinking water, houses and equipment for advanced posts. The concerned land is divided into two parts:

- 170,914.93 ha, representing the surface occupied and used by individual farmers
- 60,996.58 ha, representing the surface of non-occupied and unused land, which is still state owned "terrain domanial".

For the first part, VARUN has set up a contract regarding "contract-farming" with 13 associations representing all the farmers working on these fields. This contract has been signed by VARUN and 9 of the 13 farmers' associations (see Annex 2). It is indicated that the other 4 were not present at the meeting due to the political crisis, but there would be a procedure to receive the signature of the other 4 associations.

For the second part, VARUN wanted to establish a lease contract with the Malagasy government. Both contracts envisage a period of 50 years, prolongable to 99 years. This contract has not yet been signed by the concerned parties, also due to the political crisis. Within the agreement between VARUN Agriculture SARL and the farmers' associations the important parts are the obligations of both parties. (For further information of the contract refer to Annex 2).

Extracts from the business plan give some information about profitability and production system:

The total amount of investment is estimated at 2 341 682 351 000 Ariary (nearly USD 1.2 billion). This already indicates a high input production system. The production shall be tremendously increased and more than tripled: with 10 tons per ha and two seasons per year the production of rice is expected to be 2,358,128 tons of paddy/year and 404,256 tons corn/year. From the beginning of the fourth year, the production shall raise again to 12 tons per ha, which equals 2,829,754 tons paddy/year. To meet these objectives HYV seeds and high amounts of fertiliser shall be used: NPK: 150 kg/ha + 100 kg urea (per season), also organic fertiliser like manure, a basic dose of 510 t/ha and additionally per season 60 kg/ha. Because of the intense model of farming, the need for pesticides is estimated at 3 l or 10kg/ha.

The results (net) shall increase from nearly USD 70 million in the first year to USD 300 million in the fifth year. An internal rate of interest of 23% is being expected with Return On Investment (ROI) within 3 years!

The company assumed to pay rent for the land:

- 30% of the harvest for the land owned by farmers
- 20% of the harvest for state-owned land.

An Environmental Impact Assessment (EIA) is planned but not yet carried out.

In a communiqué published by the farmers' association, the organisation is very optimistic about the contract and is emphasising the fact that it is a model of contract farming, meaning that the land remains the property of the farmer. It seems that the association did not realise that the land will be cultivated by VARUN and that this will create unemployment to a high degree.

5.3 Analysis of FDI

5.3.1 Driving factors for FDI - From the investors point of view

Why are private companies or investment banks looking for FDI in land in foreign countries? The major reason in Europe might be identified as the politically determined intention to reduce CO_2-emissions. In the USA also incentives for the production of agro-fuels are given but mainly with the intention to become more independent from fossil fuels. Since large quantities of non-used land are neither available in the US nor in Europe, companies started looking abroad to produce agro-fuels.

When in 2008 food prices increased tremendously, countries dependent on food imports started investigating for opportunities to produce food abroad. This is mainly true for Asian countries (for further information please refer to "Seized", containing a list of countries investing in food production in other countries established by GRAIN) who desperately started activities in foreign countries.

When searching for large areas of underutilised land with an agricultural potential, Madagascar seemed to be a good option:

- The investor-friendly government was thought to be stable and guaranteed investments;
- Incentives e.g. tax exemptions were given by the government making investments more attractive;
- Access to land is given to foreigners and large areas of arable land are to be available;
- Existing agro-ecological zones have a high potential for agricultural production like corn, rice, sugar cane, palm oil, Jatropha and others;
- The same is valid for the water availability allowing (i) to irrigate land for increasing agricultural production, (ii) to generate power for processing agricultural primary products and also (iii) being sufficiently available for the processing cycle themselves like sugar-cane processing;
- Low wages for agricultural and non-agricultural labour.

There are also inconveniences like a bad infrastructure and lack of knowledge. On the other hand investors could easily win acceptance for the project if promising to invest in infrastructure, education or health issues.

5.3.2 Driving factors for FDI - From the recipients point of view (Farmer)

Driving factors for the acceptance of farmers might best be analysed using the case of an investment like NEO. The company wants to invest in Jatropha plantations in the region of Bongolava, a remote area with a poor transport, health and education infrastructure mainly depending on animal husbandry with a high risk of cattle losses due to traditional cattle rustling (*Dahalo*).

Due to poor opportunities, farmers are deeply interested in cooperating with NEO and expect:

- Improvement of road infrastructure and thus, better market access;
- Rural electrification with an improvement of living conditions and new business opportunities;
- Improved access to water, health and education facilities;
- Employment opportunities and raising living standards;
- Improvement of social infrastructure such as schools and health centres;
- Improvement of the security situation resulting in a reduction of cattle thefts.

On the other hand, where cultivated land areas are directly concerned, farmers are severely negatively affected by expropriation often without appropriate compensation.

5.3.3 Driving factors for FDI - From the recipients point of view (Government)

Governments have high expectations in FDI in land and often grant investors incentives. Madagascar`s political objective to attract foreign investment is explicitly mentioned in the national 5-year inter sectoral development plan "Madagascar Action Plan (MAP)" and expressed as challenge. This includes FDI in land with the expected positive effects:

- Increasing food production and making Madagascar a food export country (Green Revolution);
- Modernisation and rationalisation of the Malagasy agriculture
- Reducing expenditures of foreign currency for importing food or fuels;
- Increasing tax income and thus, the national budget;
- Building infrastructure (roads, harbour etc.);
- Increased number of people with access to water, electricity, schools, education, professional training and health services;
- Job creation and reduction of poverty resulting in an integrated rural development.

Besides this official objective, another hidden agenda is the personal profit of decision makers expecting personal benefits from investors (via corruption).

Rice harvest

6. Identification and portrayal of impacts of FDI in land in terms of sustainable development

As driving factors for different groups differ widely, so do the impacts. Whether a FDI in land-project will result in a win-win-situation for all parties or not depends on the conditions and the contractual arrangements. By analysing some cases an indication of the impact can be given.

6.1 On a Macro-Economical Level

6.1.1 Trade Balance and National Budget

In the first years, projects in the investment period often import machinery to improve the mechanisation process (trucks, tractors, agricultural machinery, irrigation systems etc.). This will affect the trade ballance in a negative way. In the long term, an increased food or agro-fuel production will help to improve the trade balance. Either it helps to reduce the need in imports or it increases the exports. Foreign investors are also local taxpayers and will contribute to the national budget after the first period of investment, as the business model of VARUN shows.

The produced agro-fuel could be either used for local or national electrification and transport and thus economise foreign currency by reducing the amount of imported fuel or exported and improve the trade balance by gaining export revenues.

6.1.2 Production and Productivity

In Madagascar there is still a huge potential to increase production and productivity (due to still existing land resources). For instance, only in the high plateau is fertiliser used in agricultural production. The implementation of projects like VARUN or DAEWOO can contribute to a massive increase in production using underutilised land with intensive production methods. The case of VARUN shows that by changing production methods on paddy fields (using fertiliser and pesticides) the productivity can probably be raised extremely.

6.2 On a Micro-Economical Level

Most projects will create additional jobs and thus additional revenue for farmers with all the positive impacts on rural development by stimulating the local economy. So far, no cases of exploitation of labour have been reported. But there are projects that plan to import skilled labour from abroad. From a development point of view (i) contract farming and (ii) employment of local labour force are preferable as they promote local development.

Contract farming is practised by tobacco and cotton companies, but is rarely seen in the context of newly developed agro-fuel or food production projects. There are two exceptions: D1 BP Fuel Crop had developed a contract farming model to cultivate Jatropha. After four years in Madagascar, about 1,500 ha of Jatropha have been established. Early in 2009, the management of D1 BP Fuel Crops decided to abandon Madagascar, since the development of new plantations was too slow and economies of scale could not be realised. Farmers hesitated to invest in Jatropha because of the long investment period and the absence of incentives (low prices fixed for Jatropha grains), but also because of conflicts with food production. Furthermore, farmers were bearing a high risk cultivating a crop with unknown needs and yields. Other farmers used the possibility of growing Jatropha on former “territoire domanial” to enlarge their cultivated area and thus creating further land property.

The second contract farming project is going to be implemented by VARUN Agriculture. Here, farmers give all land use rights to VARUN. VARUN wants to mechanise the cultivation and many farmers will be unemployed. The rent, 30% of yields, will vary according to the success of farming. Farmers, normally trying to minimise risks, did agree to this model. Only a few farmers will have the opportunity to work for VARUN and thus, the project will create unemployment. Most projects are based on leasing contracts creating new jobs with the possibility of increasing income for the poor with all the above-mentioned possible improvements for the rural poor.

6.3 On social and socio-cultural level

In general, a social development can be expected, since many companies want to invest in educational and health services, at least for their own staff.

As stated above, the educational level in Madagascar is very low and this is especially true in rural areas. 28% of rural population over 5 years have never been enrolled in school, 62% visited primary schools and 9.7% secondary schools. Only 0.3% went to university. As in many other developing countries, agricultural child labour is quite common with severe negative effects on the educational level in rural areas. Parents often lack the financial means to pay school fees, books etc. In the province of Toliara, less than 50% of children are going to school at all. With additional sources of income, parents might be able to send children to school resulting in raising the education level. An agricultural apprenticeship is not known in Madagascar and generally, the next generation is acquiring their agricultural know-how from their parents leading to a conservation of traditional farming methods.

Most likely, health services will improve. On the other hand, there is a risk of an increase in infectious diseases like HIV, if labour is imported from countries with high HIV prevalence[1]. Today, Madagascar is still a country with a very low prevalence of HIV (< 1%).

Very critical is the case of VARUN: Today 250,000 farmers are earning a living on the areas foreseen for lease. When VARUN will start cultivating the land, not all farmers will be employed and this might result in an increase in social insecurity.

Conflicts may be raised by occupying pastureland used now by farmers for grazing zebu cattle. Since farmers today cannot prove the ownership of their land (lack of documented land rights), violation of land rights is likely to happen and land is given to investing companies without compensation. This will create trouble or acts of sabotage as shown in the case of GEM Biofuels who received land formerly occupied by the commune.

Water availability in most areas is ensured. But, if companies start cultivating sugar cane or palm oil or change the cultivation system from rain fed to irrigation systems, the demand for water increases tremendously. This might result in conflicts about the then scarce water resources. One case in Madagascar is already known where by extension of sugar cane production in Ambilobe by a Chinese sugar producing company a water conflict with local farmers occurred.

1 Like for DAEWOO that planned to import skilled labour from SA.

6.4 On environment

There are direct and indirect impacts on the environment.

Madagascar is a hotspot of biodiversity. This implies that special care has to be taken that no area rich in biodiversity will be affected by FDI in land. All the analysed projects seem to respect this concern. Another direct negative impact is water pollution. By intensifying agricultural production systems and using an extended land area (corn, sugar cane, Jatropha and palm oil) an increased use in fertiliser and pesticides run off is likely to happen, affecting negatively water quality. The same is true for the intended intensification of rice production (by VARUN). Fertiliser run off might result in an eutrophication of rivers and lakes.

Negative effects by intensifying agricultural production will be aggravated by the transformation process from sugar cane to ethanol which implies the use and pollution of large quantities of water resources.

On the other hand, establishing Jatropha plantations may result in an increased soil fertility of marginal soils. In mountainous areas Jatropha might reduce exposure to erosion, already an often-stated problem in Madagascar's irrigation perimeters.[2]

Furthermore, converting savannahs to cultivated land can help to reduce bush fires, reduce negative effects on soil fertility and CO_2-emissions. Perennial trees like Jatropha will increase biomass production and thus increase CO_2 sequestration. In Boeny, the Jatropha project will help to reduce bush fires and thus, contribute to the protections of the National Park of Ankarafantsika.

In contrast, animal husbandry (Madabeef) on 200,000 ha will produce huge amounts of methane and thus increase greenhouse gas emissions. The net effect of CO_2-emissions of the different FDI-projects is difficult to predict because the intensification of agricultural production with increased consumption of fertiliser will result in an increase of CO_2-emissions.

By using ethanol and Jatropha oil to satisfy demands in household energy – a plant oil cooker is currently under construction – fuel wood can be replaced, pressure on forest resources reduced and deforestation rates diminished. Rural electrification on the base of Jatropha oil as well as the use of Jatropha oil in the transport sector is less harmful to the environment than using fossil fuels.

6.5 On food security policies

Hunger and famine occur every year in Madagascar and food vulnerable groups add up to about 600,000 people at present, especially in the southern regions (Anosy, Androy, Atsimo Adrefana). Unfortunately, no FDI in land projects are envisaged to increase food production for local consumption in these regions.

Most FDI in land projects do not have direct impacts on food security. So far projects for agrofuel production in Madagascar do not compete with food production (though there are exceptions) and FDI food production projects are primarily aiming to export produced food. Therefore, FDI on land projects do not directly affect the food balance. For instance, all food production of DAEWOO was designated for export. The Malagasy government missed the opportunity to improve food security by demanding a certain part for local/national consumption. An exception is the VARUN project. Only 20% of the produced rice is designated for export. If this project meets the objective of tripling its rice production, Madagascar could be self-sufficient in rice production and thus in its most important staple food.

There are indirect effects by improving the economical situation of farmers which allows the farmer to buy more food.

Global climate change will affect the climate patterns in Madagascar by shortening the rainy season and increasing the number of drought periods. On the other hand rainfall will increase in tropical regions already characterised by high precipitation. This will increase risks in food production and together with population growth raise the number of people affected by hunger and famine.

2 Erosion is said to severely affect existing irrigation schemes from sand flying into paddy fields reducing soil fertility. Furthermore, sand in irrigation channels hampers water management.

7. Opportunities and Threats for the Achievement of Overall Objectives of Ongoing Programmes in Madagascar

7.1 Opportunities and Threats for the achievement of overall objectives of ongoing projects/programmes in the partner country

German development cooperation in Madagascar aims mainly to improve natural resources management and to protect the unique biodiversity by supporting the creation of further protected areas, reforestation with eucalyptus and acacia to reduce pressure on natural forests, improvement of the transformation process from wood to charcoal, improvement of stoves to reduce the consumption of wood and charcoal, mitigation of climate change, reducing erosion and exposure to erosion.

These activities and the ongoing environmental programme PGM-E will surely be affected by large investments in land. By producing other sources of energy like Jatropha oil or wood (Oji Paper Group) pressure on natural forest resources can be reduced, if provided locally. Following this substitution strategy, the GTZ programme has established relations to the actual and possible investors.

However, the use of agro-fuels as domestic energy (replacement of wood, charcoal, and fuel) needs more research. One possibility could be to use Jatropha oil and ethanol as fuel for stoves. Besides technical aspects, the crucial question remains which type of energy source is the most effective. It is most likely that different solutions will be appropriate for different environments. So far in Madagascar the competiveness of Jatropha in comparison with fuel wood production has not been proven.

Planting Jatropha could help to reduce erosion problems which Madagascar is facing in many regions. Links could be created with programmes targeting to minimise erosion in Madagascar as the KfW financed "Programme pour la Lutte Anti-Érosive (PLAE)".

In the intervention areas of GTZ and KfW (Boeny, Diana, Atsimo Andrefana), German financed reforestation programmes are carried out to increase wood and charcoal production. In the same regions investors also planned to extend Jatropha plantations. Even if these investments are on a hold for the time being, it is most likely that FDI could lead to land use conflicts between Jatropha oil and charcoal production.

Nearly every above-mentioned FDI project wants to intensify production methods by using high inputs of fertiliser and pesticides resulting in increased water pollution. Implementing sewerage purification plants could minimise the negative effects of water pollution. No information is available whether this is foreseen. It is very likely, that large-scale investment projects like DAEWOO in the eastern regions consuming large land areas will result in an increased land pressure. In order to secure food production, farmers will further practice slash and burn ("tavy") and destroy natural resources and biodiversity. This is contradictory to USAID financed programmes with the target to reduce the practice of tavy in the eastern regions.

7.2 Opportunities for existing concepts and support strategies to prevent or mitigate certain risks of FDI at country level

Land Reform and Management

The basis for an effective and efficient management of natural resources is clearly defined and legally anchored in land titles and/or land use rights. A land reform started in 2005 in Madagascar, but still lacks consistent legislation and documentation of land rights. As stated above, in 2004 land titles existed for only about 176,000 ha. Farmers who do not yet hold an official land title use most agricultural land!

Documented land rights are a precondition to avoid companies easily grabbing already occupied land. There is a process of land reform including the installation of "guichets fonciers" ongoing in order to create a consistent legal framework and to document land rights. The concept of implementing "guichet fonciers" foresees installing land titling authorities on a communal level to grant land certificates. In principle, it is expected that every user of land will get such a certificate. Unfortunately, one big donor, the MCA Madagascar, has decided to suspend its activities due to the political crises. Nevertheless, the process of implementing a land reform is still ongoing.

Protected Areas

There was a strong commitment and will by the Malagasy government to further extend the protected areas. But even for the areas already under protection (e.g. natural parks) created in the recent years, still today no efficient protection can be guaranteed. Additional activities have to be initiated to create alternatives for the population in buffer zones to help care for these recently created protected areas. The PGM-E is actively involved in the buffer zone development.

Resource Planning and Management

Resource planning is one prerequisite analysing the existing potential of natural resources (land, water etc.) and their potential use for and contribution to covering the needs of the country. It is important for Madagascar to get a better understanding and knowledge of its own potential especially in light of a fast growing population and the challenges of climate change. Recently, the GTZ carried out such a study for the Rwandan government. A similar project could help Madagascar in deciding whether to assign large areas of land to foreign companies.

Capacity Building

GTZ has acquired knowledge and has a long track record in the fields of efficient natural resource management, in food as well as in agro-fuel production. As recent experience shows, demands by international investors have not similarly been dealt with in an effective and efficient manner by Malagasy authorities. Authorities at different levels have to deal with international companies with highly qualified and experienced lawyers. The capacity of Malagasy authorities at all levels (national, regional and local) has to be strengthened to ensure that the national and regional interests will be considered during the contract negotiations and later implementation of FDI projects.

FDI in land projects can result in positive and sustainable contribution to the development of the agricultural sector and to all affected actors (investors, farmers, government, etc.) only under certain conditions. To ensure, that all aspects are looked at within a holistic approach, a new "Sustainable Agricultural Investment Unit" could be developed and implemented. Capacity has to be developed to ensure that the unit which could be established under the umbrella of the EDBM is able to carry out its tasks.

Monitoring and Evaluation

An integral part in the process of land acquisition and FDI projects is the environmental impact assessment that has to be carried out as described above. One integral condition for the final decision on FDI is the specification of requirements and obligations that have to be carried out by the investing company. So far no process to monitor if and how these contractual obligations are fulfilled has been established. The same remains true for periodical evaluations to analyse if the exante expectations of the different stakeholders could be realised during the FDI implementation and operation.

Mechanisms for political dialogue

Mechanisms for an open and transparent decision making process have to be implemented. In the context of good governance, international donors have to convince the national and local authorities to implement coherent procedures. It has to be assured that all concerned authorities (on national, regional and local level) and all affected groups/ individuals are informed and adequately involved in the decision making process related to FDI in land. The public has to be informed in a way that they can understand the information and the consequences for them.

Kind of regulations / safeguards to enhance economic, social and ecological sustainability

- An open and transparent decision making process with clear guidelines;
- Involvement of all concerned authorities (on national, regional and local level) and all affected groups/individuals;
- Before allowing FDI in land, land use rights have to be clarified and titles have to be granted;
- A land use planning should be mandatory before allowing extensive FDI in land;
- Environmental impact assessments have to be analysed;
- A maximum size of land areas should be defined legally in light of the production systems foreseen and the value chain of each product;
- A maximum duration of FDI contracts should be defined legally (e.g. leases should expire after one generation);
- FDI in land for food export production has to take into account the specific situation of the affected area;
- No FDI in land in areas rich in biodiversity;
- Preference of FDI in land projects designated to food production for national consumption in order to increase food security.

Pollination of vanilla

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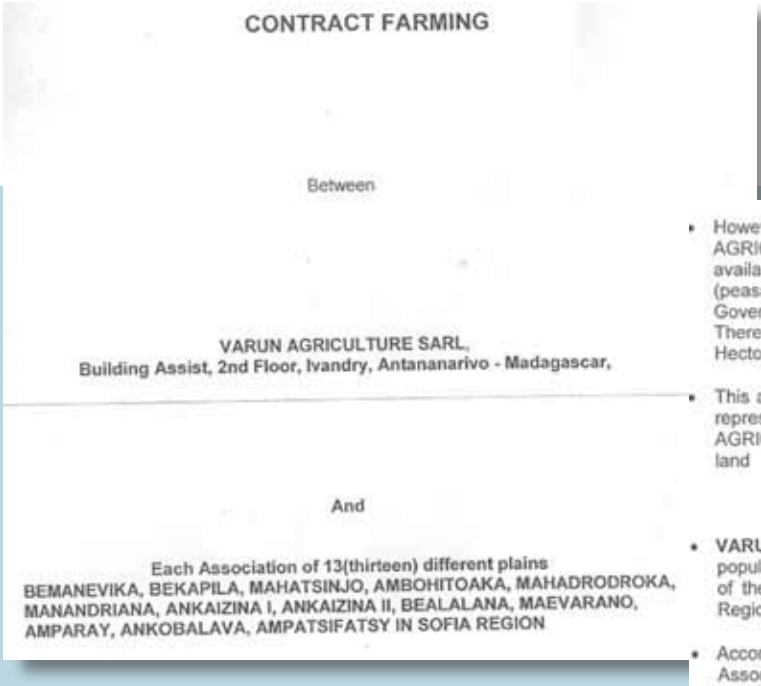
Cashew Plantation


Chameleon


Rice harvest

Annex 1: Map showing the density of population (in year 2004)

Annex 2: Contract of VARUN with farmers' associations



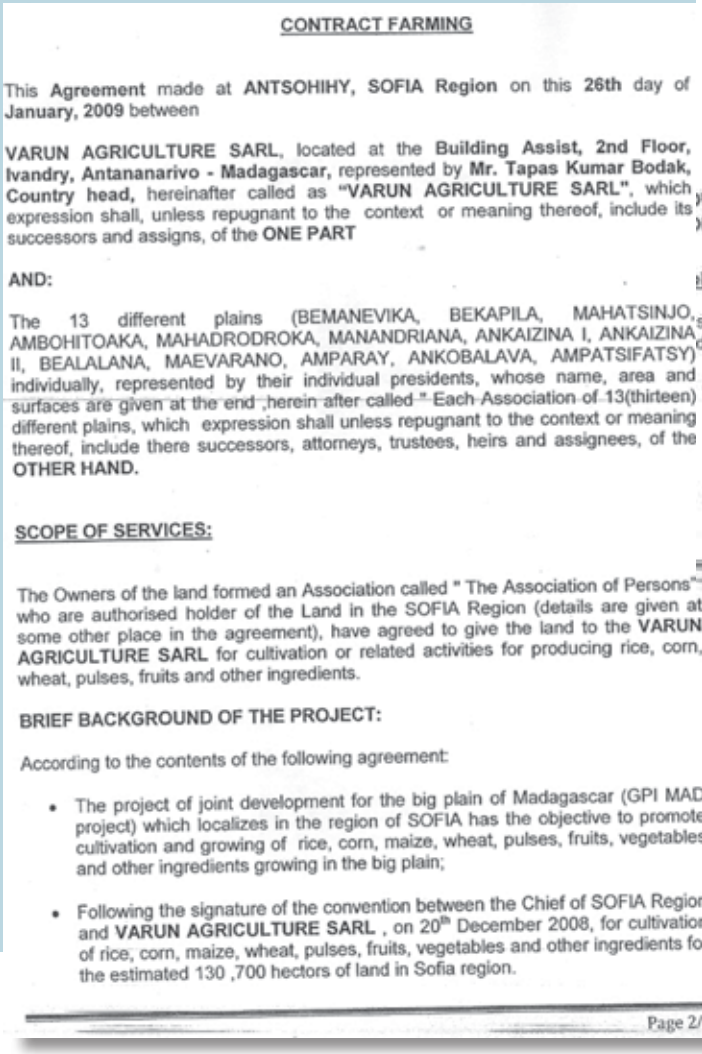
CONTRACT FARMING

Between

VARUN AGRICULTURE SARL,
Building Assist, 2nd Floor, Ivandry, Antananarivo - Madagascar,

And

Each Association of 13(thirteen) different plains
BEMANEVIKA, BEKAPILA, MAHATSINJO, AMBOHITOAKA, MAHADRODROKA, MANANDRIANA, ANKAIZINA I, ANKAIZINA II, BEALALANA, MAEVARANO, AMPARAY, ANKOBALAVA, AMPATSIFATSY IN SOFIA REGION



CONTRACT FARMING

This **Agreement** made at **ANTSOHIHY, SOFIA Region** on this **26th** day of **January, 2009** between

VARUN AGRICULTURE SARL, located at the **Building Assist, 2nd Floor, Ivandry, Antananarivo - Madagascar,** represented by **Mr. Tapas Kumar Bodak, Country head,** hereinafter called as **"VARUN AGRICULTURE SARL"**, which expression shall, unless repugnant to the context or meaning thereof, include its successors and assigns, of the **ONE PART**

AND:

The 13 different plains (BEMANEVIKA, BEKAPILA, MAHATSINJO, AMBOHITOAKA, MAHADRODROKA, MANANDRIANA, ANKAIZINA I, ANKAIZINA II, BEALALANA, MAEVARANO, AMPARAY, ANKOBALAVA, AMPATSIFATSY) individually, represented by their individual presidents, whose name, area and surfaces are given at the end ,herein after called " Each Association of 13(thirteen) different plains, which expression shall unless repugnant to the context or meaning thereof, include there successors, attorneys, trustees, heirs and assignees, of the **OTHER HAND.**

SCOPE OF SERVICES:

The Owners of the land formed an Association called " The Association of Persons" who are authorised holder of the Land in the SOFIA Region (details are given at some other place in the agreement), have agreed to give the land to the **VARUN AGRICULTURE SARL** for cultivation or related activities for producing rice, corn, wheat, pulses, fruits and other ingredients.

BRIEF BACKGROUND OF THE PROJECT:

According to the contents of the following agreement:

- The project of joint development for the big plain of Madagascar (GPI MAD project) which localizes in the region of SOFIA has the objective to promote cultivation and growing of rice, corn, maize, wheat, pulses, fruits, vegetables and other ingredients growing in the big plain;
- Following the signature of the convention between the Chief of SOFIA Region and **VARUN AGRICULTURE SARL** , on 20th December 2008, for cultivation of rice, corn, maize, wheat, pulses, fruits, vegetables and other ingredients for the estimated 130 ,700 hectors of land in Sofia region.

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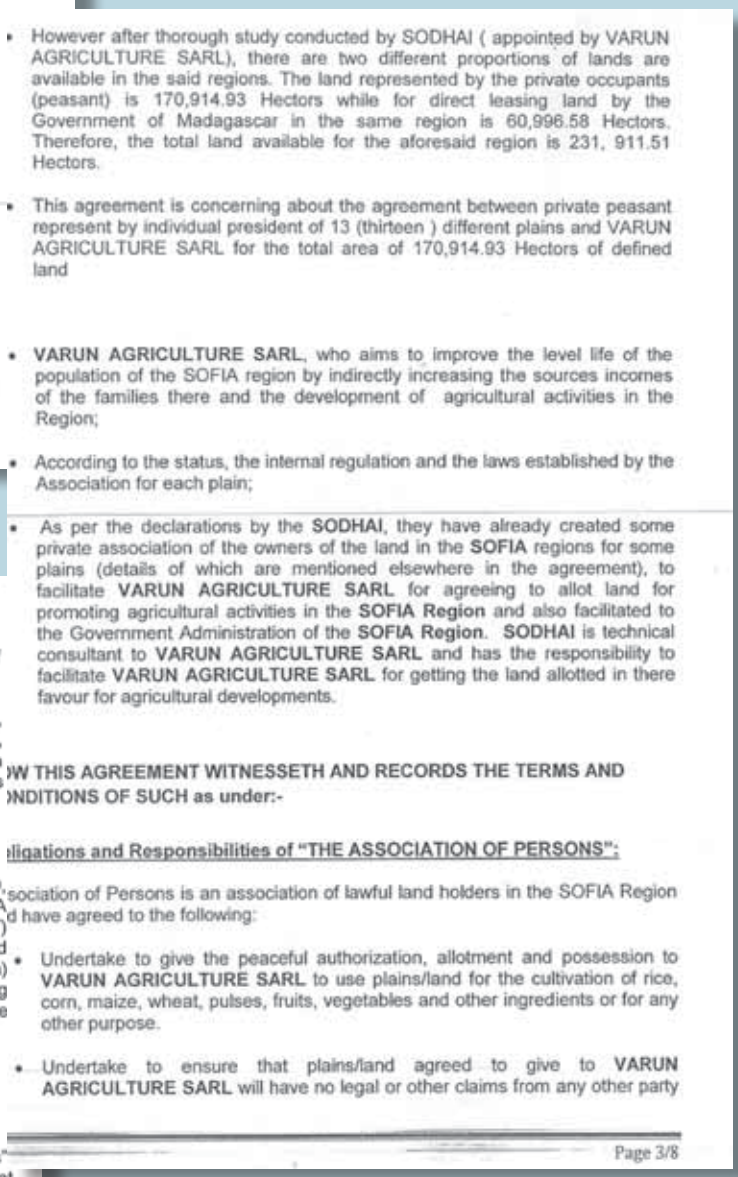

- However after thorough study conducted by SODHAI (appointed by VARUN AGRICULTURE SARL), there are two different proportions of lands are available in the said regions. The land represented by the private occupants (peasant) is 170,914.93 Hectors while for direct leasing land by the Government of Madagascar in the same region is 60,996.58 Hectors. Therefore, the total land available for the aforesaid region is 231, 911.51 Hectors.
- This agreement is concerning about the agreement between private peasant represent by individual president of 13 (thirteen) different plains and VARUN AGRICULTURE SARL for the total area of 170,914.93 Hectors of defined land
- **VARUN AGRICULTURE SARL**, who aims to improve the level life of the population of the SOFIA region by indirectly increasing the sources incomes of the families there and the development of agricultural activities in the Region;
- According to the status, the internal regulation and the laws established by the Association for each plain;
- As per the declarations by the **SODHAI**, they have already created some private association of the owners of the land in the **SOFIA** regions for some plains (details of which are mentioned elsewhere in the agreement), to facilitate **VARUN AGRICULTURE SARL** for agreeing to allot land for promoting agricultural activities in the **SOFIA Region** and also facilitated to the Government Administration of the **SOFIA Region**. **SODHAI** is technical consultant to **VARUN AGRICULTURE SARL** and has the responsibility to facilitate **VARUN AGRICULTURE SARL** for getting the land allotted in there favour for agricultural developments.

W THIS AGREEMENT WITNESSETH AND RECORDS THE TERMS AND NDITIONS OF SUCH as under:-

ligations and Responsibilities of "THE ASSOCIATION OF PERSONS":

sociation of Persons is an association of lawful land holders in the SOFIA Region d have agreed to the following:

- Undertake to give the peaceful authorization, allotment and possession to **VARUN AGRICULTURE SARL** to use plains/land for the cultivation of rice, corn, maize, wheat, pulses, fruits, vegetables and other ingredients or for any other purpose.
- Undertake to ensure that plains/land agreed to give to **VARUN AGRICULTURE SARL** will have no legal or other claims from any other party

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and will be free from any nature of nuisance, possession and legal or other hassles.

- Undertake to sell there share of cultivated products to **VARUN AGRICULTURE SARL** at the prevailing local market price in that region.
- Undertake to authorise and allow **VARUN AGRICULTURE SARL** to sell the cultivated products or produce of lands to any party and in any manner.
- Undertake to respect and maintain healthy and cordial relations with the **VARUN AGRICULTURE SARL** and its employees;
- Undertake to take care and respect of the use of infrastructures under construction,
- Undertake to facilitate to **VARUN AGRICULTURE SARL** in all the manners for ensuring the efficient use of land/plains and providing the requisite assistance on the same
- Undertake to agreeing to all the decisions of the **VARUN AGRICULTURE SARL** related to cultivation and growing of any agricultural products in the allotted regions and will not in any manner interfere, directly or indirectly, in the workings of **VARUN AGRICULTURE SARL** or technology/other inputs or resources used by them

OBLIGATIONS OF VARUN AGRICULTURE SARL

- **VARUN AGRICULTURE SARL** agreed to take care Lands/Plains allotted to it including financing of equi required, for cultivation and growth of rice, corn, maiz vegetables and other ingredients or for any other purpo
- **VARUN AGRICULTURE SARL** has agreed to bring g experience as well as the materials and necessa realization of the project;
- Respecting all the traditions and the social disciplines project is focalized ;
- Setting up the social and cultural infrastructures (Hea training, public institution, road infrastructures, drin equipments for the security guards) in the region w implementation of the project;
- **VARUN AGRICULTURE SARL** has agreed to recru recruitment of local employees or workers where the considering there merits, performance and capabilities

- **VARUN AGRICULTURE SARL** has agreed to grant 30% of the harvests or produce from the land/plains of the regions to the land owners/members of the association of that region.;
- **VARUN AGRICULTURE SARL** has agreed to buy the cultivation or produce of the share of the share given to the land owners at the prevailing market rate and land owners shall sell all there share to **VARUN AGRICULTURE SARL** at the agreed prize.
- **VARUN AGRICULTURE SARL** has agreed to sell the produce in the following manner, unless situation or circumstances otherwise demanded:

Rice:
- ❖ Sixty percent (60 %) for domestic;
- ❖ Twenty percent (20 %) for export;
- ❖ Twenty percent (20 %) for buffer stock.

Wheat:
- ❖ Fifty percent (50 %) for domestic;
- ❖ Thirty percent (30 %) for export;
- ❖ Twenty percent (20 %) for buffer stock.

Maize:
- ❖ Fifty percent (50 %) for domestic;
- ❖ Fifty percent (50 %) for export;

Pulses:
- ❖ Hundred percent (100%) for exports

Unless otherwise better sell options are available, aforesaid selling pattern can be followed.

SODHAI's RESPONSIBILITIES:

SODHAI Agreed to facilitate, unless both the parties to the agreement agreed otherwise:

- SODHAI Madagascar will represents the Association for each transaction with **VARUN AGRICULTURE SARL** during the realization and execution of this project;
- The SODHAI society will be the intermediary and the coordinator for technical, social cooperation and any relation between the Association, members of the association and the **VARUN AGRICULTURE SARL**
- SODHAI will ensure the peaceful allotment and authorization of land to **VARUN AGRICULTURE SARL** and made available to them in ready to utilise for cultivation.

- All the transactions related to agreement can be communicated to the Other Party to the agreement through SODHAI.

DURATION OF THE AGREEMENT

The duration of this present agreement will be 50 years, unless **VARUN AGRICULTURE SARL** agreed to terminate the same and can be extended for a period of 99 years subject to the progress of the project and mutual agreement.

CONFIDENTIALITY:

The land owners, the Association, members of the association and the SODHAI have agreed to keep all the information and details as strictly confidential and shall not be disclosed to any party in between or to the third party in any circumstances, as it may directly or indirectly affect the working of the **VARUN AGRICULTURE SARL**

OWNERSHIP RIGHTS

It is agreed between the parties to the agreement that all rights and ownership on the produce, equipments, brands, projects, and trade marks will be that of the **VARUN AGRICULTURE SARL** and no other party (parties) including the owners, the association, members of association, and the SODHAI shall not claim for any of the rights on above or otherwise.

SETTLEMENT OF DISPUTES:

Any matter, claim or dispute between the parties in respect of any matter under this agreement may be resolved amicably between the parties within a period of 60 days after the date of notification of the dispute.

ARBITRATION:

In the event that no agreement is reached within 60 days af
of the dispute will be resolved through arbitration in accor
and applicable arbitration laws and rules of Madaga
Madagascar in the region where dispute arises shall hav
disputes.

GOVERNING LAWS & JURISCDICTION:

This agreement and the rights duties of the Parties arisi
shall be governed, construed, interpreted and given effect
Laws of Madagascar.

IN WITNESS WHEREOF VARUN **AGRICULTURE SARL** and the Members of the Association have hereunto set their hands and seal the day and the year first above written.

Antsohihy, 26th January 2009.

For **VARUN AGRICULTURE SARL** Agriculture SARL

TAPAS KUMAR BODAK
Country head

THE ASSOCIATION

N°	Plains	Surface(Ha)	District	Name and Signature
1	BEMANEVIKA	1 770Ha	PORT-BERGE	RASANIMANANA Eddy Patrick RANTAKASON Jean Claude
2	BEKAPILA	52 500Ha	PORT-BERGE	
3	MAHATSINJO	490Ha	MAMPIKONY	
4	AMBOHITOAKA	7 300Ha	MAMPIKONY	
5	MAHADRODROKA	10 250Ha	ANALALAVA	BEANKAZINA TOLOTRA
6	MANANDRIANA	8 058Ha	BEFANDRIANA Nord	Rakotoarisoa Jean
7	ANKAIZINA I	47 700Ha	BEALANANA	
8	ANKAIZINA II	23 550Ha	BEALANANA	
9	BEALANANA	6 040Ha	BEALANANA	
10	MAEVARANO	6 400Ha	BEALANANA	
11	AMPARAY	5 855Ha	MANDRITSARA	
12	ANKOBALAVA	700Ha	MANDRITSARA	
13	AMPATSIFATSY	300Ha	MANDRITSARA	
	TOTAL SURFACE	170 913Ha		

MADAGASCAR

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